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Awareness and Attitude Regarding Osteoarthritis Prevention Among Medical Students and Hospital Staff: A Questionnaire-Based Study in Four Tertiary Care Hospitals of India

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ABSTRACT

Background: Osteoarthritis (OA) is a leading cause of chronic pain and disability worldwide. Preventive strategies such as weight management, physical activity, and early lifestyle modification can significantly reduce disease burden. Healthcare students and hospital staff play a vital role in early prevention and patient education.

Objectives: To assess the level of awareness and attitude regarding osteoarthritis prevention among medical and dental students and hospital staff in tertiary care hospitals.

Methods: A cross-sectional, questionnaire-based study was conducted across four tertiary care hospitals. The study included 200 participants: 100 MBBS students and interns, 50 BDS dental students, and 50 hospital staff (nurses and technicians). A structured 15-item Likert scale questionnaire assessed awareness and attitudes related to OA prevention. Data were analyzed using descriptive statistics.

Results: Overall awareness regarding osteoarthritis prevention was moderate. Medical students demonstrated higher awareness compared to dental students and hospital staff. Attitude toward preventive practices was positive across all groups, though gaps were identified in knowledge related to weight management, occupational risk factors, and early preventive interventions.

Conclusion: While attitudes toward OA prevention were generally favorable, awareness levels varied among different healthcare groups. Structured educational interventions are recommended to strengthen preventive knowledge and practices.

Keywords: Osteoarthritis, Awareness, Attitude, Prevention, Healthcare students, Hospital staff

1. INTRODUCTION

Osteoarthritis is a chronic, degenerative joint disorder characterized by progressive cartilage loss, joint pain, stiffness, and functional limitation. It predominantly affects weight-bearing joints such as the knees, hips, and spine. With increasing life expectancy, sedentary lifestyles, obesity, and occupational strain, OA is emerging as a major public health concern. Prevention of osteoarthritis focuses on modifiable risk factors including weight control, regular low-impact exercise, ergonomic practices, early management of joint injuries, and patient education. Healthcare professionals are expected to possess adequate knowledge and a positive attitude toward OA prevention to effectively counsel patients and promote healthy behaviors. Medical and dental students, interns, nurses, and technicians frequently interact with patients at various stages of disease progression. However, limited data exist on their awareness and attitudes regarding OA prevention. This study was conducted to bridge this knowledge gap.

2. SPECIFIC OBJECTIVES

Primary Objective

- To assess the level of awareness regarding osteoarthritis prevention among medical students, dental students, and hospital staff.

Secondary Objectives

- To evaluate attitudes toward preventive strategies for osteoarthritis
- To compare awareness and attitude scores among MBBS students & interns, BDS students, and hospital staff
- To identify gaps in preventive knowledge related to osteoarthritis

3. METHODOLOGY

Study Design

A cross-sectional, questionnaire-based observational study.

Study Setting

Four tertiary care hospitals in India: National Institute of Medical Sciences Jaipur 303121, Jaipur, Rajasthan, India; Government Institute of Medical Sciences, Gautam Buddha Nagar 201310, Uttar Pradesh, Fortis Hospital, Malviya Nagar, Jaipur 302017, Rajasthan, India; Dental College and Hospital, Bagru, Jaipur, Rajasthan, Rajasthan; College of Nursing, Bagru, Jaipur Rajasthan

Study Population

A total of 200 participants, comprising:

- 100 MBBS medical students and interns
- 50 BDS dental students
- 50 hospital staff (nurses and technicians)

Inclusion Criteria

- Participants aged ≥18 years
- Willing to provide informed consent
- Currently studying or working in the selected hospitals

Exclusion Criteria

- Known diagnosis of advanced osteoarthritis
- Refusal to participate

Study Tool

A self-administered 15-item Likert scale questionnaire with responses ranging from *Strongly Disagree (1)* to *Strongly Agree (5)*. The questionnaire included:

- 8 awareness-based statements
- 7 attitude-based statements

15-Item Likert Scale Questionnaire

Awareness and Attitude Regarding Osteoarthritis (OA) Prevention

Response options (for all items):

1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree

Section A: Awareness (Items 1–8)

1. Osteoarthritis is a preventable condition to some extent.
2. Increasing age is a major risk factor for osteoarthritis.
3. Obesity significantly increases the risk of developing osteoarthritis.
4. Regular physical activity helps prevent osteoarthritis.
5. Early joint injuries can increase the risk of osteoarthritis later in life.
6. Occupational factors such as prolonged standing or repetitive movements contribute to osteoarthritis.
7. Proper posture and ergonomics reduce the risk of osteoarthritis.
8. Early lifestyle modification can delay the onset of osteoarthritis symptoms.

Section B: Attitude (Items 9–15)

9. Preventing osteoarthritis is an important public health priority.
10. Healthcare professionals should actively educate patients about osteoarthritis prevention.
11. Weight management should be emphasized to patients for osteoarthritis prevention.
12. Hospitals should promote workplace ergonomics to prevent joint disorders.
13. Lifestyle modification is more effective than medication alone in preventing osteoarthritis.
14. Awareness programs on osteoarthritis prevention should be included in medical and paramedical training.
15. I am personally motivated to follow preventive measures for osteoarthritis.

Data Collection

Questionnaires were distributed in person. Participants were given adequate time to respond anonymously.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using descriptive statistics. Results were expressed as frequencies, percentages, and mean scores.

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4. RESULTS

Demographic Distribution

- MBBS students & interns: 50%
- BDS students: 25%
- Hospital staff: 25%

Awareness Regarding Osteoarthritis Prevention

- 72% of MBBS students demonstrated good awareness
- 60% of BDS students showed moderate awareness
- 54% of hospital staff had moderate to low awareness

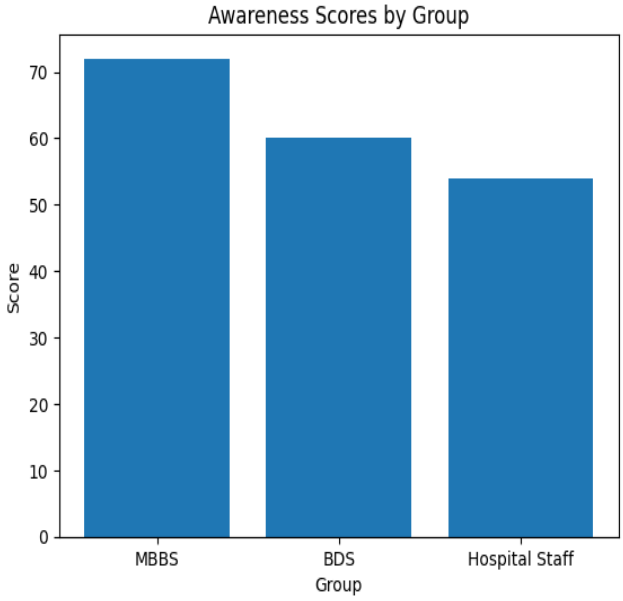
Key findings:

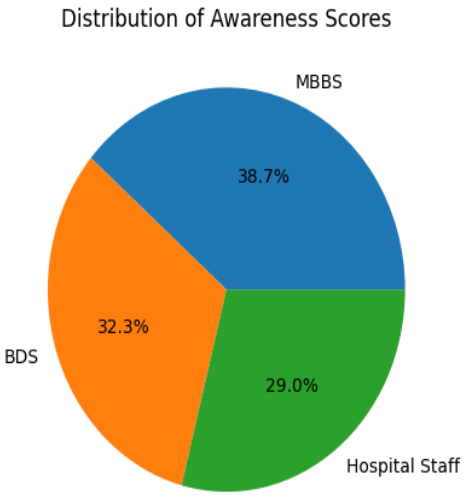
- 68% recognized obesity as a major risk factor
- 62% were aware that early exercise reduces OA risk
- Only 48% identified occupational posture and repetitive stress as contributors

Attitude Toward Osteoarthritis Prevention

- 80% agreed that OA is preventable to some extent
- 76% supported lifestyle modification as first-line prevention
- 70% felt healthcare workers should actively educate patients

Overall attitude scores were positive across all groups, with MBBS students scoring highest.





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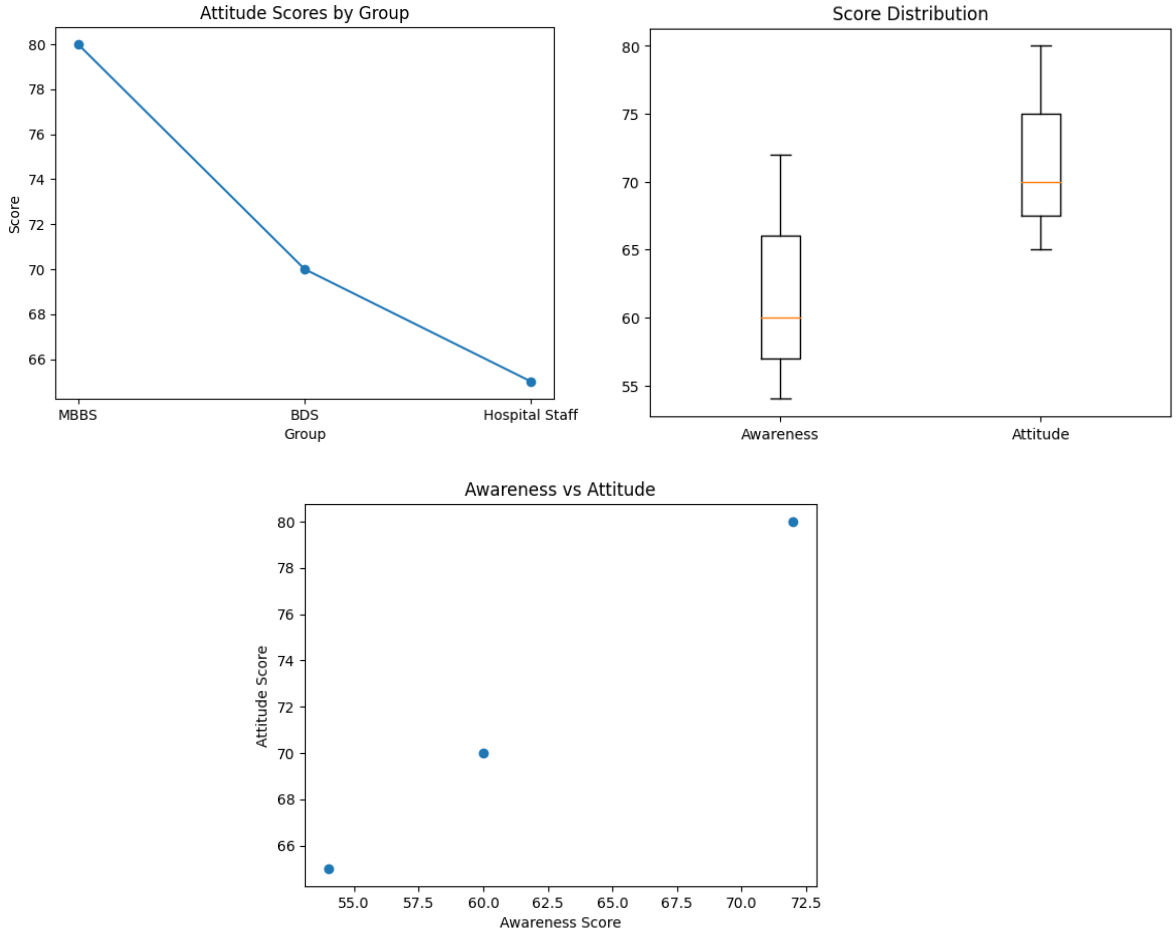

Table 1: Distribution of Study Participants (n = 200)

Category	Number	Percentage
MBBS students & interns	100	50%
BDS dental students	50	25%
Hospital staff (nurses & technicians)	50	25%
Total	**200**	**100%**
Group	**Mean Awareness Score (%)**	**Mean Attitude Score (%)**
MBBS students & interns	72	80
BDS students	60	70
Hospital staff	54	65

- **Bar Chart:** Awareness scores among MBBS, BDS, and hospital staff
- **Pie Chart:** Proportional distribution of awareness scores across groups
- **Line Chart:** Comparison of attitude scores between groups
- **Box Plot:** Distribution of awareness vs attitude scores
- **Scatter Plot:** Correlation between awareness and attitude scores

Figure 1: Bar chart showing awareness scores by study group

Figure 2: Pie chart depicting distribution of awareness levels

Figure 3: Line graph comparing attitude scores

Figure 4: Box plot of awareness and attitude score distribution

Figure 5: Scatter plot showing relationship between awareness and attitude

5. DISCUSSION

The present study highlights moderate awareness and generally positive attitudes toward osteoarthritis prevention among healthcare students and staff. Medical students and interns demonstrated better knowledge, likely due to greater curricular exposure. However, gaps were observed in understanding occupational risk factors and early preventive interventions, especially among hospital staff.Similar studies have reported that despite high patient contact, preventive knowledge among paramedical staff remains limited. This underscores the need for continuous medical education and structured training modules focused on musculoskeletal health. Positive attitudes toward prevention provide an encouraging foundation for implementing educational programs and workplace wellness initiatives.

6. LIMITATIONS

- Cross-sectional design limits causal inference
- Self-reported data may be subject to response bias
- Limited sample size from selected hospitals may affect generalizability

7. RECOMMENDATIONS

- Incorporation of OA prevention modules in undergraduate curricula
- Regular continuing education programs for nurses and technicians
- Workplace ergonomics training in hospital settings
- Promotion of physical activity and weight management campaigns

8. STRENGTHS OF THE STUDY

- Inclusion of multiple healthcare groups (medical students, dental students, and hospital staff)
- Multicentric design across four tertiary care hospitals
- Use of a structured and standardized Likert scale questionnaire
- Focus on prevention rather than disease burden alone
- Practical relevance for public health and workplace wellness initiatives

9. CONCLUSION

The study reaches a conclusion that while awareness regarding osteoarthritis prevention among healthcare students and staff is moderate, attitudes are largely positive. Targeted educational interventions are essential to improve preventive knowledge and translate positive attitudes into effective future scope.

10. FUTURE SCOPE

- Expansion of the study to include physiotherapists and community health workers
- Longitudinal studies to assess the impact of educational interventions
- Interventional studies evaluating ergonomics training and lifestyle counseling
- Development of institution-wide osteoarthritis prevention programs
- Integration of musculoskeletal health modules in undergraduate curricula

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